



Element 8  
**UTILITIES**

**UTILITIES ELEMENT  
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## INTRODUCTION

The Growth Management Act (GMA) requires the Utilities Element of the Comprehensive Plan to consist of *“the general location, proposed location and capacity of all existing and proposed utilities, including but not limited to, electrical lines, telecommunication lines and natural gas lines.”* Accordingly, the following utilities providing service to Maple Valley are addressed in the Utilities Element of the Comprehensive Plan:

- Potable Water
- Sanitary Sewer
- Electricity
- Natural Gas
- Telecommunications
- Solid Waste Service
- Surface Water Management

The City of Maple Valley does not own or manage most of its public utilities. The only City-owned utility is Surface Water Management, which is discussed in the Capital Facilities Element.

The Utilities Element gauges the ability of existing and planned utility facilities to meet future demand. Generally, the current provision of utility services and the ability to meet future population demand in Maple Valley are not hindered by any serious constraints. This Support Analysis section presents basic information regarding the general location, proposed location, and capacity of all existing and proposed utilities, including electrical, natural gas, telephone, cable, surface water, solid waste, and water and wastewater utilities. It should be noted that where utility providers are private corporations, specific information on utility consumption and demand are considered to be proprietary, and are therefore not disclosed. Further, information is available from individual utilities, or in the planning documents of the various service providers.

The City maintains a number of franchise agreements with utility providers, which allow for the existence of support facilities, such as water and sewer mains and appurtenances, cable, electrical, and natural gas facilities within the City's rights-of-way (streets). The status of the franchise agreements are noted in the listing of current providers.

## POTABLE WATER SERVICE

Drinking water for Maple Valley is provided primarily by two independent water districts: the Covington Water District, which provides water to the southernmost half of the City; and the Cedar River Water and Sewer District, which provides water to roughly the northernmost third of the City. One Group-A water system; Cherokee Bay Community Club, Inc. provides service to approximately 840 customers within the City to isolated areas within the Covington Water District franchise boundary. Both Covington Water District and Cedar River Water and Sewer Districts have 20-year

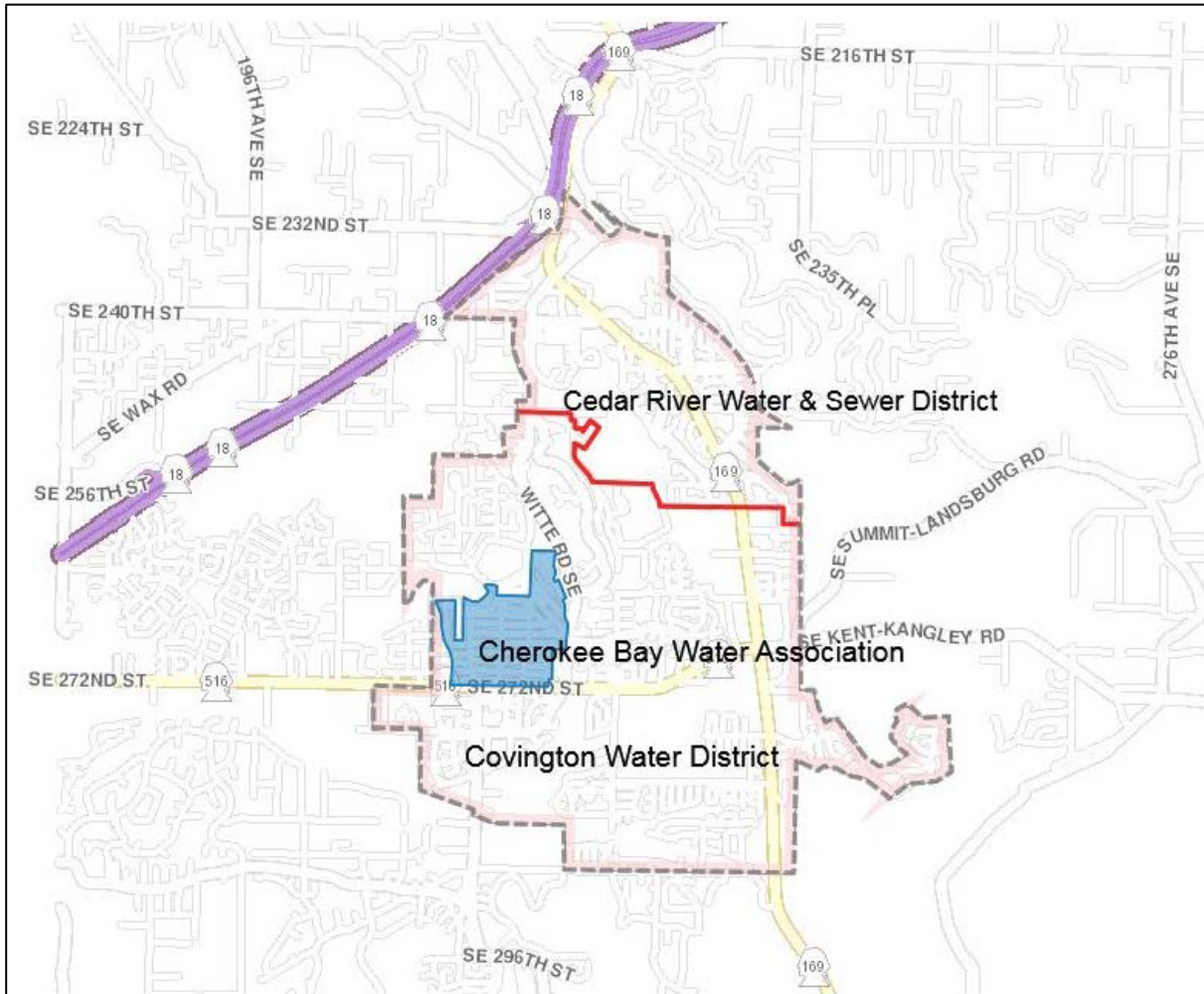


## Element 8

# UTILITIES

### Support Analysis

franchise agreement with the City of Maple Valley that expire on January 1, 2026 and May 22, 2026, respectively. Figure 8.1 depicts the franchise service area of each water district.



**Figure 8.1 - Water Districts**

### Covington Water District

The Covington Water District is located in southeast King County on a plateau to the east of the cities of Auburn and Kent. The District is roughly bounded by Soos Creek on the northwest, State Route 18 on the southwest, the Ravensdale area on the northeast, and the Green River on the south. The District's service area boundary encompasses approximately 55 square miles that includes portions of the cities of Covington, Maple Valley and Black Diamond as well as unincorporated King County. Maple Valley is located in the northern portion of the District.



The District operates several facilities for the supply, storage and distribution of water. Supply to the system is provided primarily by the Second Supply Pipeline of Tacoma, with support from ten production wells from two well fields located at the 222nd Place and Witte sites, plus a single well at a site located off of 264th Street. The District receives water from the Regional Water Supply System (RWSS) through a partnership arrangement with Tacoma, City of Kent and Lakehaven Utility District. In addition, the District has emergency interties with King County Water District No. 111 and the City of Kent. The District also maintains operational connections with the Cedar River Water and Sewer District (CRWSD) at four locations, two of them within the City.

### **Cedar River Water and Sewer District**

The Cedar River Water and Sewer District (CRWSD) covers an area of approximately 36 square miles south and east of Renton, in the vicinity of the City of Seattle's Lake Youngs watershed. Lake Youngs receives potable water from the Cedar River Watershed. The watershed is a closed area of approximately 96,000 acres lying between Hobart and the Crest of the Cascade Mountains. Maple Valley is located in the southern end of the District's East Area. The City of Seattle furnishes water by contract to the District, and is responsible for water quality and quantity. The City of Seattle's source of water is the Cedar River watershed. CRWSD also provides peak summer water from an independent well located north and east of the City. The well generally operates from early spring to early fall of each year.

### **A.C. Butcher Water System**

The A.C. Butcher System, adjacent to Rock Creek Elementary School, ceased operation 15 years ago, leaving 10 homeowners without water service. The Covington Water District stepped forward to restore water service to residents, but residents did not support improvements necessary to improve their water system to any reasonable standard. The Covington Water District has provided water to the residents through a master meter ever since and looks toward redevelopment of the area to properly rehabilitate the system serving the ten properties. Water District #94 was completely absorbed by Covington Water District prior to 2006.

### **Level of Service Standards**

Minimum Level of Service (LOS) standards for water and sewer facilities are recommended by State and Federal agencies. All water purveyors are required to comply with these standards as well as minimum design standards for water systems in accordance with the U.S. Environmental Protection Agency, Washington State Department of Health (DOH) and the King County Coordinated Water System Plan.



DOH's "Sizing Guidelines for Public Water Supplies" is the primary document governing the sizing and design of public water systems in the State of Washington. These standards are as follows:

Item	Standard
Minimum Source Requirement	800 gallons per day (gpd)/connection
Storage Replenishment	72 hours
Standby Storage	200 gallons/equivalent residential unit (ERU)
Fire Flow	Urban residences – 1,500 gallons per minute (gpm); Maple Valley Commercial – 3,000 gpm
Fire Suppression Storage	fire flow @ 20 pounds per square inch (psi)
Minimum pressure	20 psi
Normal working system pressure	50 – 80 psi (not less than 35 psi and not greater than 125 psi)
Duration of Fire Flow	1 hour/1,000 gpm (Depends on Fire Marshal determinations)
Flow velocities	Not to exceed 8 feet per second (fps) – highest demand and fire flow

Water districts measure their level of service in terms of supply as well as flow. Supply is measured in gallons per day (gpd) or in millions of gallons per day (mgd). Metering is reported in ccf (hundreds of cubic feet). Water flow (and fire flow) is measured in terms of gallons per minute (gpm).

### Existing Levels of Service

The current level of demand for residences in various parts of King County fluctuates between 175 and 436 gpd, measured in terms of Equivalent Residential Units (ERU's). With an average of 2.6 residents per household, and an average demand of 360 gallons of water per connection, this means that each County resident is using roughly 138 gallons per day. Consumption regionally and nationwide has dropped considerably due to conservation and fear of shortages.

### Covington Water District

The Covington Water District completed a Comprehensive Water System Plan (WSP) in accordance with the State Department of Health Drinking Water Regulations (WAC 246-290), the requirements of King County, and the State's Public Water System Coordination Act of 1977 (RCW 70.116). The Covington Water District Water System Plan update (2014) is currently in draft form. The existing WSP was approved by the State Department of Health (February 2007) and by the King County Council with the condition that District undertake a series of regional coordination and planning efforts.

The overall supply of the Covington Water District's system in 2012 was 12.60 mgd. The average daily demand is 3.56 mgd. During peak flows demand reaches about 7.4 mgd. By 2035, the average and maximum day water demand is forecast to be 6.3 mgd and 13.3 mgd respectively.

**UTILITIES****Support Analysis****Cedar River Water and Sewer District**

Between 1994 and 2005, the Cedar River Water and Sewer District experienced a growth rate in number of connections of approximately 60%; however, water sales during the same time increased by only 20%. The average use per connection during that period went from 633 gallons per connection per day in 1994 to 470 gallons per connections per day in 2005. Average use per single family residence or ERU has declined from 237 gpd in 1994 to an average of 174 gpd in 2013. Those reductions in water use exceeded anticipations and reflect successful conservation efforts and stewardship of water as a finite resource.

**Existing Conditions****Covington Water District**

The Covington Water District relies upon County and City land use designations to forecast future water supply requirements. Demand for Covington Water District services is affected by increasing urbanization. As of the end of 2013, there were 17,031 service connections; 96% are residential and 4% are non-residential.

The Covington Water District's conservation program has been further shaped by its status as a member of the Cascade Water Alliance (Cascade) from 1999 to 2012. All Cascade members were committed to approaching water conservation in a similar manner, and to equitable member participation/benefit within the context of Cascade's conservation program. Also, during its membership in Cascade, the Covington Water District continued to maintain independent customer based (demand side) and supply side conservation programs. During that time, the Covington Water District's demand side conservation program was reshaped to include participation in and consistency with Cascade's program and to eliminate program duplication. The Covington Water District ended its membership in Cascade in late 2012. However, the Covington Water District continues to include some of the conservation measures implemented by Cascade in its current and future conservation program.

The Covington Water District also has potential to use water from the sources supplying the Cedar River Water and Sewer District. The Cedar River Water and Sewer District also has the potential to use water from Covington Water District. All water balanced between the two districts is transferred through interties. This Joint Agreement calls for joint ownership, operation of water storage and transmission facilities between the two districts to facilitate the balancing of water. The agreement has been supported by the City of Seattle and the Seattle Public Utilities. Water balancing between the two districts must be achieved with no net flow on an annual basis.

**Cedar River Water and Sewer District**

The Cedar River Water and Sewer District is a fully metered Group A water system, that served 10,500 ERU's through 7,789 connections in 2014. Nearly 92% of the Cedar River Water and Sewer District's current accounts were single-family residences and the remaining 8% were multi-family, commercial and community services such as churches and schools.



The Cedar River Water and Sewer District system includes three water supply connections to the Seattle regional water system, one groundwater well, 8.1 million gallons of water storage contained in 7 separate storage reservoirs, 11 pump stations, 18 pressure zones and a network of transmission and distribution pipelines that serve the area.

## Future Plans

### Covington Water District

The Covington Water District's future improvement projects are selected based on their effectiveness to eliminate deficiencies in the water system. To budget for the identified improvements, projects are assigned a planning-level cost and placed on a year-by-year schedule. Projects that are high priority, and have an associated high degree of implementation certainty, are slated for implementation within the six-year planning period. Projects that are given a moderate or low priority, and/or for which the implementation schedule is unknown (e.g., projects funded in part by developers), are placed on a schedule for implementation within the twenty-year horizon. The Covington Water District revisits its CIP schedule on an annual basis. This is done to confirm project priorities and to coordinate schedules with the transportation improvement plans of the local jurisdictions.

The three most common forms of alternative payment for improvements are revenue bond, the Public Works Trust Fund (PWTF), State Revolving Fund (SRF) and developer extension agreements. Revenue Bonds are secured solely on the revenue developed by the District, don't require an election, and may result in higher water rates. The Public Works Trust Fund provides low interest loans, loan guarantees and technical assistance to the Covington Water District. It is administered by the Washington State Department of Commerce. Developer Extension Agreements are necessary to provide adequate levels of service to new developments. The developer in this case is required to bear the cost of bringing service to a property and upgrading the system to serve the property before being allowed to connect to the system. This type of arrangement is effective for the Covington Water District in allocating the financial burdens of accommodating new growth.

### Cedar River Water District and Sewer District

The Cedar River Water and Sewer District receives potable water from Seattle Public Utilities Cedar River Watershed through a long-term water sales agreement. The current agreements regarding water supply run to January 1, 2062, with a 50-year renewal clause. The Cedar River Water and Sewer District also owns a well that provides a small volume of peaking water supply.

The Cedar River Water and Sewer District is in the process of updating their Comprehensive Plan. The completed ten-year Plan will identify and prioritize the capital expenditures, rates, and debt levels well into the future. The Plan will also prioritize capital projects based on such issues as water quality, fire flow, water main replacement, and expansion to new customers and services.

Water management within the City of Maple Valley could also change. Future change is possible at the request of Cherokee Bay, but they have not expressed interest at this time. The Covington Water

**UTILITIES****Support Analysis**

District is currently seeking updates to intertie agreements with Cedar River Water and Sewer District in order to better address operational conditions. The original agreements were written around construction and implementation more than operational characteristics. With changes in Cedar River Water and Sewer District supply conditions and growth patterns within the Cedar River Water and Sewer District, it is important that operational issues be addressed to modernize the intertie agreements.

In a similar fashion, the Cedar River Water and Sewer District's Partnership Agreement with the Regional Water Supply System (RWSS) is in need of updates for the same reasons. The original Partnership Agreement was structured to create an entity for construction of major water development projects and less toward operational relationships. The RWSS Partnership and Covington Water District have developed plans for emergency operations and treatment at the project headworks as well.

**Financing****Covington Water District**

The Covington Water District has a total CIP budget for 47 separate projects valued at \$41,367,789 (\$44,758,859 inflated) over the 2014–2019 planning horizon. Significant projects (presented in inflated dollars) during this planning period include completion of the Green River Filtration Facility (\$9.1M), Tank 1 Relocation (\$5.5M), Tank 3 Seismic (\$3.5M), Tank 4 Seismic (\$4.8M), and the 204<sup>th</sup> Avenue Extension (\$2.5M). Costs are stated in 2014 dollars and are escalated to the year of planned spending for financing projections at an annual inflation rate of 4%.

A level 4.25% annual rate increase is anticipated to meet the Covington Water District's operation and maintenance, debt service, and capital funding needs. As projections of the future are inexact by nature, the Covington Water District will continue to develop a rolling six-year financial planning model on an annual basis in conjunction with development of the subsequent year budget.

Annually, the Covington Water District establishes the revenue requirements for the following year as a part of its budget and forecasting activity. If the revenue requirements exceed the revenue to be generated by existing water rates in the following year, then the Covington Water District engages a rate consultant to make the appropriate analysis and recommend changes to the Board of Commissioners for rates and rate structure after a thorough evaluation by Covington Water District staff. The Covington Water District Board has a long standing policy of using a cost-of-service approach to rate setting. The water rates are set to cover operating costs and the capital improvements needed to replace facilities that serve existing customers and/or construction of new facilities that serve existing customers.

The Covington Water District also reviews annually its Capital Improvement Program, as outlined in Section 9, for the subsequent budget and forecasting years. If there are material changes to the capital improvement plan since the last rate consultant study to set connection charges, the consultant is engaged to re-evaluate the sufficiency of the current connection charges and make a

**UTILITIES****Support Analysis**

recommendation for changes as appropriate to the Board of Commissioners. The Covington Water District Board expects that the connection charges will be set to recover the cost of capital improvements necessary to meet new growth and to address deficiencies in the system.

**Cedar River Water and Sewer District**

The Board of Commissioners of Cedar River Water and Sewer District have long held to a concept that the Cedar River Water and Sewer District ratepayers deserve the lowest responsible rate possible. To achieve this ideal, the Board of Commissioners review the Cedar River Water and Sewer District financial position and customer count monthly. The Cedar River Water and Sewer District Commissioners also oversee the Annual Budget which looks one year back, and three years forward. The Cedar River Water and Sewer District uses a cost of service rate methodology and periodically has a rate and fee analysis performed to ensure that customers are paying overhead and debt appropriately.

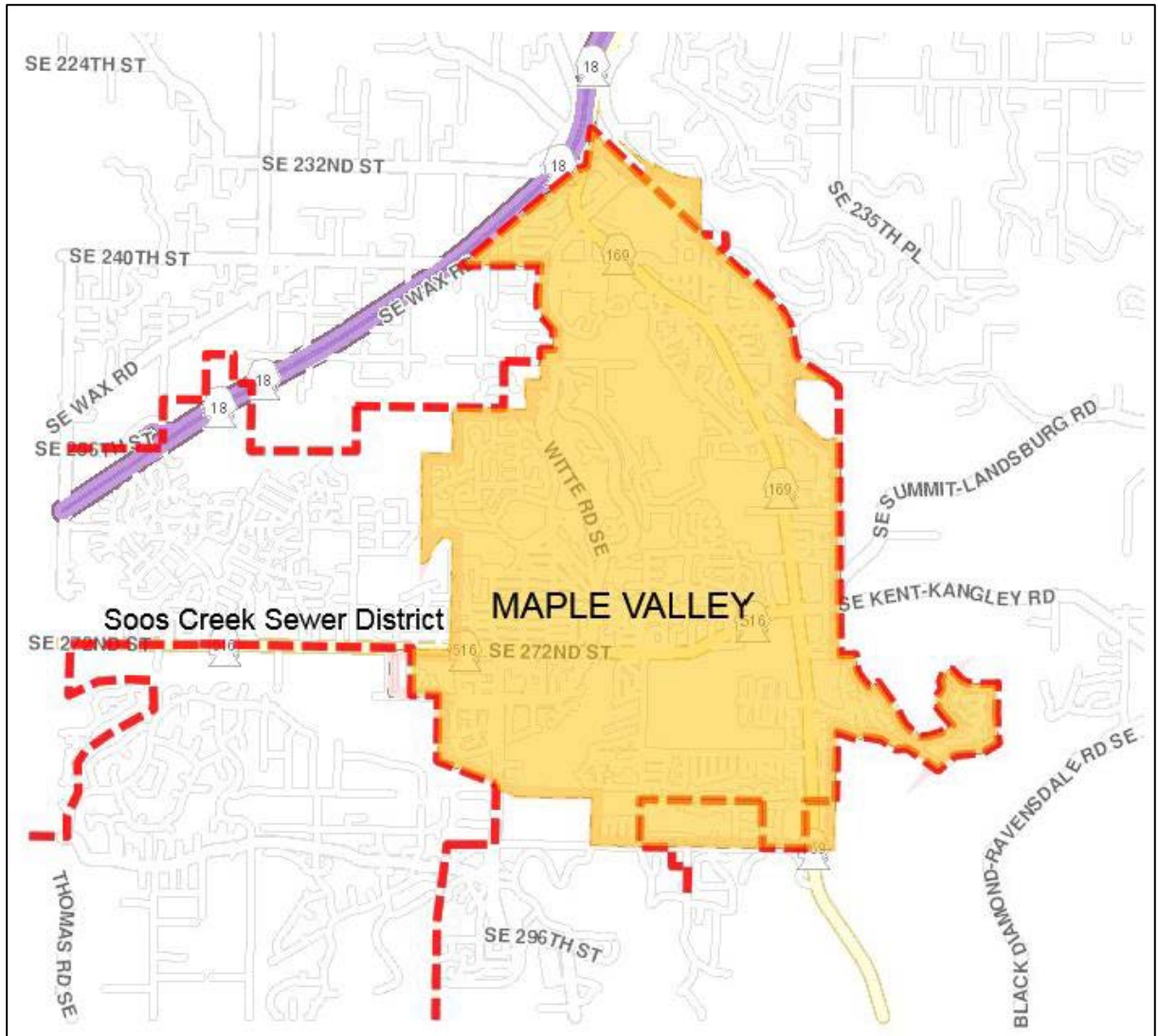
In meeting their commitment to responsible rates, the Commissioners use borrowed debt in a very manageable and limited manner. When the need for a capital project is high and cannot be funded from cash, or the interest rate offered on debt is very attractive (PWTF Low Interest Loans), borrowed debt is always considered. In general however, capital projects are funded from rates whenever possible. When capital projects are constructed that benefit specific areas of the Cedar River Water and Sewer District, the Cedar River Water and Sewer District evaluates repayment options that are fair and reasonable for both the existing ratepayers and the potential customers and sets a payback / connection charge that reflects that balance.

The Cedar River Water and Sewer District anticipates only moderate water system improvements inside the City of Maple Valley within the ten year planning horizon of the Comprehensive Plan being written.

**SANITARY SEWER SERVICE**

The entire City of Maple Valley is served by the Soos Creek Water and Sewer District (SCWSD). Sewage is conveyed through a system of gravity sewer mains which drain to interceptors or lift stations. Sewer mains follow public rights-of-way as much as possible. The lift stations discharge sewage through pressurized force mains to a downstream system generated mostly by gravity. (Pumped systems are used when it is not feasible to install a total gravity system.) The entire District consists of approximately 480 miles of gravity sewer, 32 miles of force mains, and 29 functioning lift stations.

SCWSD's fifteen year franchise agreement with the City of Maple Valley expires on June 21, 2021. A map of the SCWSD is shown on Figure 8.2.



The City has limited potential for expansion due to its proximity to the City of Black Diamond to the south, the City of Covington to the west and the bordering areas currently designated rural. However, the area referred to as Summit Place, aka the Donut Hole, just south of SE 272nd Street has the potential to significantly impact the City's population. This area is currently outside the Urban Growth Boundary but completely surrounded by the City of Maple Valley's city limits. King County proposed an amendment to the King County Comprehensive Plan that would allow the Summit Place property to be incorporated into the Urban Growth Boundary and become part of Maple Valley's Potential Annexation Area at some time in the near future. Sewer service to this area can be accomplished once this has occurred. The City of Maple Valley is committed to coordinate phasing



development of sewer services according to future land use needs and to meet Growth Management Act (GMA) concurrency requirements, in coordination with the utility providers.

Maple Valley is located within the Southeast Service Area of the SCWSD, which comprises seven sub-basins, the boundaries of which are determined by topography and thus the direction of gravitational flow. Maple Valley's boundaries lie in portions of the Upper Jenkins Creek Sub-basin, the Lake Lucerne Sub-basin (which serves Lake Lucerne, Pipe Lake and Lake Wilderness drainage areas), and the Lake Sawyer Sub-basin. Most of this area contributes wastewater to the Jenkins Creek drainage area through lift stations (pumping stations) which connect to trunk sewers that discharge into the County's Regional Wastewater Treatment Plant in Renton.

### **Level of Service Standards**

The level of service standards most relevant to this sewer system are those that determine the condition of the lines, lift stations and mains rather than the capacity of the system. Wastewater treatment capacity is largely the responsibility of King County Metro which receives and treats the SCWSD's waste. SCWSD's design standards are contained in the Soos Creek Water and Sewer District Sewer Comprehensive Plan, approved in 2014.

### **Existing Level of Service**

The SCWSD system has been expanding to meet the demands of its rapidly growing communities, including Maple Valley. Presently, SCWSD serves approximately 91,800 persons in a 35 square mile service area. This service amounts to 29,500 single family residential sewer connections and an additional 5,800 customer equivalents for a total of approximately 35,300 ERU's.

SCWSD serves approximately 11,000 residents and 150 businesses in Maple Valley, approximately 16 percent of the SCWSD's population. SCWSD does not currently provide service to all of its residents. Some (especially in rural areas) are served by on-site septic systems. Due to the high permeability of Puget Sound glacial soil, it is both SCWSD's and King County's policy to encourage replacement of on-site septic systems in urban areas with public sewer (unless certain environmental constraints exist) in order to lower the risk of groundwater contamination, particularly in areas with denser development and years of septic use. There are areas in Maple Valley still on septic systems, but they are generally in good condition. The GMA and King County regulations do not allow the SCWSD to provide sewer expansions outside the Urban Growth Area, except where needed to address specific health and safety problems or sewer facilities such as pump stations, force mains and trunk lines that do not provide connections to the rural area or other exceptions as identified in the King County Comprehensive Plan.

The annexation of unanticipated rural areas (such as the County's 4-to-1 program that converts adjacent rural lands to urban) is one example that could cause a significant impact on the ability of the SCWSD to meet unexpected demand.



## Needs and Plans

SCWSD shall use the Washington State Department of Ecology criteria for determining design flows. The predicted design flow may be calculated by hand or with the aid of a computer hydraulic model. Collection facilities shall be designed to handle predicted flows for a minimum five year design life and conveyance systems shall be designed to handle predicted flows for minimum periods of 20 years, subject to changes in land use and growth projections.

SCWSD developed a capital improvements program in the Sewer Comprehensive Plan, with projects recommended for construction over a ten year period from 2014 through ultimate build-out. The plan was recently amended. Those projects located within the City of Maple Valley are described in the SCWSD Sewer Comprehensive Plan, approved in 2014, including estimated construction costs. Priority work includes repairs to the sewers and mains which are aging and in some cases date back to the mid-1950's. Proposed developer extension lines are also prioritized (These are facilities installed by a developer and later deeded to the SCWSD after completion).

Major planned projects include:

- Witte Road SE Main Upgrade – Phase A

Two existing segments of reverse slope pipe near LS38 experience surcharging during the 20-year storm event. To alleviate this surcharging, these two segments of existing 18-inch pipe will be replaced with new 18-inch pipe with modified inverts that allow for gravity flow. Extended surcharging also occurs upstream of LS38, primarily along Witte Road SE, during the 20-year storm event.

This project is broken into two phases. Phase A includes the replacement of approximately 500 feet of existing 18-inch pipe with new 18-inch main at a positive slope. Phase A is a short-term project with a probable project cost of approximately \$237,000. Phase B includes the replacement of 12-inch and 15-mains with new 18-inch main and is a long term project.

- Witte Road SE Main Upgrade – Phase B

Extended surcharging occurs upstream of LS38, primarily along Witte Road SE, during the 20-year storm event. This project is divided into two phases. Phase A is a short term project that includes the replacement of the existing reverse slope 18-inch pipe (see project P17-10). Phase B includes the replacement of approximately 4,625 feet of existing 12-inch and 15-inch pipe with new 18-inch main.

This is a long-term project with a probable project cost of approximately \$2,023,000.

- Lift Station 47 Addition

The proposed Lift Station 47 and force main will be designed and constructed to serve the proposed Arbors at Rock Creek subdivision and other future development. The Lift Station will have a pumping capacity of approximately 140 gpm. The District will share cost of



construction with the developer. This is a short-term project, with the District's portion of the cost being approximately \$325,000.00.

## **ELECTRICAL AND NATURAL GAS**

Electrical and natural gas service are provided within the City of Maple Valley by Puget Sound Energy, Inc. (PSE). The City has franchise agreements with PSE that run through May 21, 2021 (Ordinance No. O-06-323) and May 7, 2021 (Ordinance No. O-06-324) for electricity and natural gas service respectively.

### **Description of Facilities**

PSE (formerly Puget Sound Power and Light Company [Puget Power] and Washington Natural Gas Company) provides electrical and gas service within the entire City of Maple Valley. PSE is an investor-owned private utility company headquartered in Bellevue, Washington. It is regulated by the Washington Utilities and Transportation Commission (WUTC) and the Federal Energy Regulatory Commission.

PSE builds, operates, and maintains an extensive electric and gas distribution system consisting of generating plants, electric transmission lines, gas supply mains, distribution system substations and pressure regulating stations. This system provides gas and electricity to more than one million residential, commercial, and industrial customers in portions of an 11-county service territory in western and central Washington.

PSE's sources of energy include hydroelectricity, coal, gas, and oil. PSE considers itself a hydroelectric-based company, purchasing about 40 percent of its power from utilities that own five large hydro-facilities on the Columbia River. Six PSE-owned hydroelectric plants, located on the Nooksack, Baker, Snoqualmie, White, and Puyallup rivers add to the hydro base on the west side of the Cascades. Other PSE-owned or partly-owned sources include four coal-fired plants (in Centralia, Washington, and Colstrip, Montana), and six gas and oil-fired plants.

The quality of service within Maple Valley is dependent on the local delivery system operated by PSE, the bulk transmission system operated by Bonneville Power Administration (BPA) and power generation by a number of agencies including PSE. Natural gas is supplied to the entire region through pipelines owned and operated by Williams-Northwest Pipeline Corporation. The "gate station" off the pipeline that provides the natural gas supply to Maple Valley is "Covington Gate," located in the City of Covington. Maple Valley is located in a service area "certificated" to PSE by the Washington Utilities and Transportation Commission.

### **Electrical System**

PSE locates and operates electric facilities within public rights-of-way in accordance with State law and a franchise agreement with King County. Maple Valley adopted this franchise agreement upon

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incorporation in 1997. Facilities are also located on property owned by Puget Sound Energy and easements across private properties.

The transmission system that covers Maple Valley is a grid which provides a link between BPA's Bulk Transmission System and the local distribution system, which connects with customers. The *Bulk Transmission System* is operated by the BPA, which operates a region wide, interconnecting transmission system that supplies electric power to utilities from federal hydroelectric projects throughout the Northwest.

- Transmission Lines  
All the transmission lines located in and supplying electricity to Maple Valley are energized at 115kV (Kilovolt). These lines supply power into the Maple Valley distribution system, and provide connections to Black Diamond, Covington, and King and Pierce Counties. Power is transferred from the transmission system to Maple Valley's local distribution system at two distribution substations located at Pipe Lake and Lake Wilderness. Power also comes from substations located in Pierce County and unincorporated King County.
- Transmission Switching Stations  
The only switching station serving Maple Valley is located in the Berrydale area. Switching stations are used to control and monitor power flow on 115kV lines in order to increase system reliability.
- Distribution Substations  
Distribution substations transform voltages of 115kV or greater to lower voltages of 12 or 34 kV.

**Existing Level of Service**

PSE foresees no immediate energy issues, and will continue to be able to supply energy to Maple Valley as the City grows.

**Needs and Plans**

As local and regional demand grows, additional distribution and transmission capacity will be needed. The existing 115 kV transmission lines are meeting the current loads. To meet future population demand within Maple Valley, PSE anticipates the need for new transmission lines and conversion of existing transmission lines to higher load. A new distribution substation may also be needed within the Maple Valley area.

**Natural Gas**

PSE provides natural gas to Maple Valley and surrounding communities through a network of interconnecting high pressure mains and distribution mains. PSE operates under a franchise agreement with the City that allows PSE to locate facilities within the public street rights-of-way.



Natural gas is provided to PSE by the Northwest Pipeline Corporation which operates a system of high pressure mains extending from Canada to New Mexico.

- Distribution Mains  
PSE currently has approximately 22 miles of distribution mains serving Maple Valley within the City limits. One 6-inch main runs alongside Kent-Kangley Road, and another 6-inch main runs along Maple Valley Highway - Distribution mains are fed from District regulators. These are typically 6-inch and smaller diameter lines usually constructed of polyethylene.
- Gas Supply Mains  
Gas supply mains are larger in diameter (6-inch and over), and designed to operate at higher pressure to deliver natural gas from the supply source to pressure reducing stations. PSE has no supply mains in Maple Valley.
- Pressure Reducing Stations  
These are located at various locations throughout the system to reduce supply main pressure to a standard distribution operating pressure of approximately 60 psi (pounds per square inch). PSE has no pressure reducing stations in Maple Valley.

### **Level of Service Standards**

The capacity of the system is primarily constrained by the volume of gas entering the network. The minimum pressure at which gas can be delivered is 15 psi. According to PSE, the average house using natural gas for both heat and hot water consumes about 1,000 therms per year. Given that 10 therms equal approximately one “mcf” of gas (or one thousand cubic feet), then 1,000 therms per house equals approximately 100,000 cubic feet of gas per year per house.

When planning the size of new gas mains, PSE uses a model which assumes all new households will use natural gas. This is because 99 percent of new houses constructed, where builders have the choice, use natural gas. Extension of service (typically conversion) is based on request and the results of a market analysis to determine if revenues from an extension will offset the cost of construction.

### **Needs and Plans**

PSE had over 2,000 gas customers in the City of Maple Valley in 1998. Based on growth trends, PSE anticipates in excess of 3,000 customers in the future. The existing system is capable of supplying approximately 8,000 natural gas customers in the Maple Valley area.

Gas availability does not appear to be an issue during the next 20 years. PSE does not anticipate new facilities within the City of Maple Valley over the next 20 years with the exception of one main that may need to be installed to meet the new demands of Black Diamond’s proposed developments. This would be a 6-inch or 8-inch High Pressure Supply Main installed in the south end of Maple Valley near Auburn-Black Diamond Road and 224<sup>th</sup> Avenue SE.

**UTILITIES****Support Analysis**

Potential methods for increasing supply to a particular area include replacement of the lines, looping, installing parallel lines, and inserting higher pressure lines into greater diameter but lower pressure mains. Three types of construction anticipated in the Maple Valley area include:

- New installation to increase capacity of existing customers or conversions from an alternate fuel.
- Main replacement projects to improve maintenance and system reliability.
- Replacement or relocation of facilities due to municipal and State projects.

Changes to federal law over the last two decades were designed to increase competition among energy sources by encouraging the development of new natural gas resources and the development of nationwide transmission pipelines. Almost all new homes use natural gas for heat. Facility technology for electricity transmission may change in the future in response to the need to create more efficient facilities and in response to various electromagnetic field and health concerns. Utility policies should be updated in the future to take into consideration changes in technology, facilities, and services.

**TELECOMMUNICATIONS**

As telecommunication technologies have evolved, convergence of these technologies has occurred, resulting in multiple communication services migrating into consolidated networks. This typically involves the convergence of previously distinct media, such as telephone, video, and data communications being transmitted over fiber optic or other infrastructure. This section describes both the current infrastructure used to provide telecommunication services in Maple Valley, as well as future services and facilities (as they can best be described now, given the rapid changes in how telecommunication services are provided and regulated).

**Telephone****Existing Telephone Services and Facilities**

Local telephone service in Maple Valley (i.e. Public Switched Telephone Network [PSTN]) is provided by Century Link. The City does not have franchise agreements with CenturyLink or Frontier for local telephone service.

In addition to the PSTN telephone service provided in Maple Valley, Voice over Internet Protocol (VoIP) telephone service, also known as digital telephone service, is locally available. This service is provided by Comcast, which provides service throughout the entire city and CenturyLink (through their Digital Subscriber Line [DSL] internet service).

PSTN telephone service. VoIP telephone uses technology that allows phone calls to be made over an IP network, such as the Internet.

**UTILITIES****Support Analysis**

Finally, mobile (cellular) telephone phone services are widely available in Maple Valley and are operated by many different cellular networks, including Verizon Wireless, AT&T Mobility, Sprint Nextel, and T-Mobile USA, among others. Mobile telephones make and receive telephone calls over a radio link by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network. All of Maple Valley is serviced by multiple cellular networks, although some areas do not have reliable access to cellular networks.

**Future Telephone Services and Facilities**

WUTC regulations require CenturyLink to provide adequate PTSN telecommunications service on-demand, and Section 480-120-086 of the Washington Administrative Code (WAC) requires CenturyLink to maintain adequate personnel and equipment to handle reasonable demand and traffic. Because CenturyLink provides service on demand, there are no limits to future capacity. Additionally, VoIP telephone service should only be restricted by bandwidth constraints on fiber optic networks that provide this digital service.

**Cable Television Service****Existing Cable Television Service**

Land-line Cable Television service is provided in the entire city by Comcast. The City maintains two franchise agreements with Comcast for use of the City's rights-of-way to maintain and operate the cable network. Comcast's franchises for Maple Valley expires on July 15, 2016 (Ordinance No. O-11-448) and September 26, 2016 (Ordinance No. O-11-469 for the Maple Ridge Annexation area). The City is also served by two satellite cable television providers, i.e. Dish Network and Direct TV, depending on the geography and satellite line-of-site access of individual properties.

**Future Cable Television and Broadband Services and Facilities**

Although the demand for cable television is likely to continue to increase as population grows, access to cable television in Maple Valley is pervasive, and thus, growth in cable subscribers is likely to increase at the same pace as population growth. However, the demand for broadband services, whether they be cable television, VoIP telephone or data/internet services, is likely to continue to grow as networks are bolstered with additional bandwidth. This growth will most likely occur relative to data/internet service, as more content become accessible online, and as we continue to communicate and interact online. These broadband services can be provided over fiber optic networks, cable networks or DSL telephone networks.

**Fiber Optic Facilities**

The City maintains a franchise agreement with Integra Telecom (Electric Lightwave) for their fiber optic data network in Maple Valley. The fiber optic network passes through Maple Valley on SR 169 and is intended to primarily serve commercial or institutional users. Currently, very few end users are in the City.



## Element 8

# UTILITIES

## Support Analysis

Given that the network utilizes City streets and rights-of-way, a franchise agreement was approved on April 20, 1998 (Resolution No. R-98-064). The franchise period is for a ten years and provides for two automatic ten-year extensions, unless a ninety day notice of termination is issued.



## GOALS & POLICIES

The Utilities Element of the Comprehensive Plan provides Maple Valley an opportunity to coordinate with utility companies in meeting future service needs efficiently, while minimizing negative impacts on the natural and built environment. This section sets forth goals and policies to maximize this process of coordination between the provision of utilities and the City's Plans for future growth. The goals and policies below help the City to balance the needs of the industry with other responsibilities, including bringing the providers into compliance with due process, ensuring consistency with this Comprehensive Plan, addressing aesthetic impacts, protecting the natural environment, providing energy conservation measures and alternatives, and controlling the disruption of installations through Plan schedule coordination.

**Goal UT-1:** Facilitate, support, and/or provide citywide utility services that are:

- Consistent, safe, reliable, and equitable.
- Technologically innovative, environmentally sensitive, and energy efficient.
- Sited with consideration for location and aesthetic.
- Fiscally sustainable.

- Policies:**
- UT-P1.1** No public and private utilities may operate within the City of Maple Valley without an approved franchise agreement or interlocal agreement.
  - UT-P1.2** Encourage the design, siting, construction, operation, and relocation or closure of all utility systems in a manner that:
    - Is cost effective.
    - Minimizes and mitigates impacts on adjacent land uses.
    - Is environmentally sensitive.
    - Is appropriate to the location and need.
  - UT-P1.3** Undergrounding of utility distribution lines, with the exception of high voltage electrical transmission lines, shall be required in accordance approved franchise agreements and tariffs approved by the Washington State Utilities and Transportation Commission.
  - UT-P1.4** Encourage the co-location or joint use of trenches, conduits, or poles so that utilities may encourage expansion, maintenance, undergrounding, and upgrading facilities with the least amount of disruption to the community or of service delivery.

### SEWER AND WATER

- Policies:**
- UT-P1.5** In coordination with the Soos Creek Water and Sewer District, the Cedar River Water and Sewer District, and the Covington Water District, extend



## UTILITIES

### Goals & Policies

- sewer and water services to meet the future land use needs and GMA concurrency requirements.
- UT-P1.6** The City of Maple Valley shall require all new subdivisions (including short plats) to connect to public sewer and water systems, where available.
- UT-P1.7** The City of Maple Valley shall support the efforts of applicable agencies and special purpose water district programs to conserve and minimize water usage.
- UT-P1.8** Existing on-site wells and septic systems may continue to serve existing residents as long as they are properly functioning, well maintained, and meet King County Health Department requirements. Future connections to public water or sewer facilities, where required by King County Health Department, should be done in coordination with the Soos Creek Water and Sewer District, the Cedar River Water and Sewer District, and the Covington Water District, as appropriate.
- UT-P1.9** New development shall avoid or mitigate adverse impacts to functioning potable water or septic systems.

#### ELECTRIC AND GAS

- Policies:**
- UT-P1.10** Where found to be safe, the City of Maple Valley shall promote open space preservation or recreational use of utility corridors, such as trails, sport courts and similar activities.
- UT-P1.11** The City of Maple Valley shall encourage utility providers to comply with applicable state regulations for tree trimming and planting, such as the planting of appropriate varieties of trees in the vicinity of power lines.
- UT-P1.12** Promote the undergrounding of new and existing electric distribution lines, where physically and financially feasible, as streets are improved and/or areas are redeveloped, based on coordination with local utilities.

#### TELECOMMUNICATION

- Policies:**
- UT-P1.13** The City of Maple Valley shall encourage multi-family, commercial and industrial developers to provide for common cable or satellite signal receiving facilities as a part of an initial building and site design and to explore joint use of such facilities among neighboring properties.
- UT-P1.14** The City of Maple Valley shall encourage cellular/wireless service providers to co-locate cellular communication antennas when new telecommunications facilities (such as monopoles or towers) are proposed, and to explore joint use of such facilities in order to reflect sensitivity to neighborhood character and reduce potential aesthetic impacts.
- UT-P1.15** The City of Maple Valley shall encourage telecommunication providers to supply the most current technologies.



## UTILITIES

### Goals & Policies

#### SOLID WASTE

- Policies:**
- UT-P1.16** Monitor solid waste collection providers for adequacy of service and compliance with service contracts.
  - UT-P1.17** Support recycling and waste reduction efforts throughout the community.